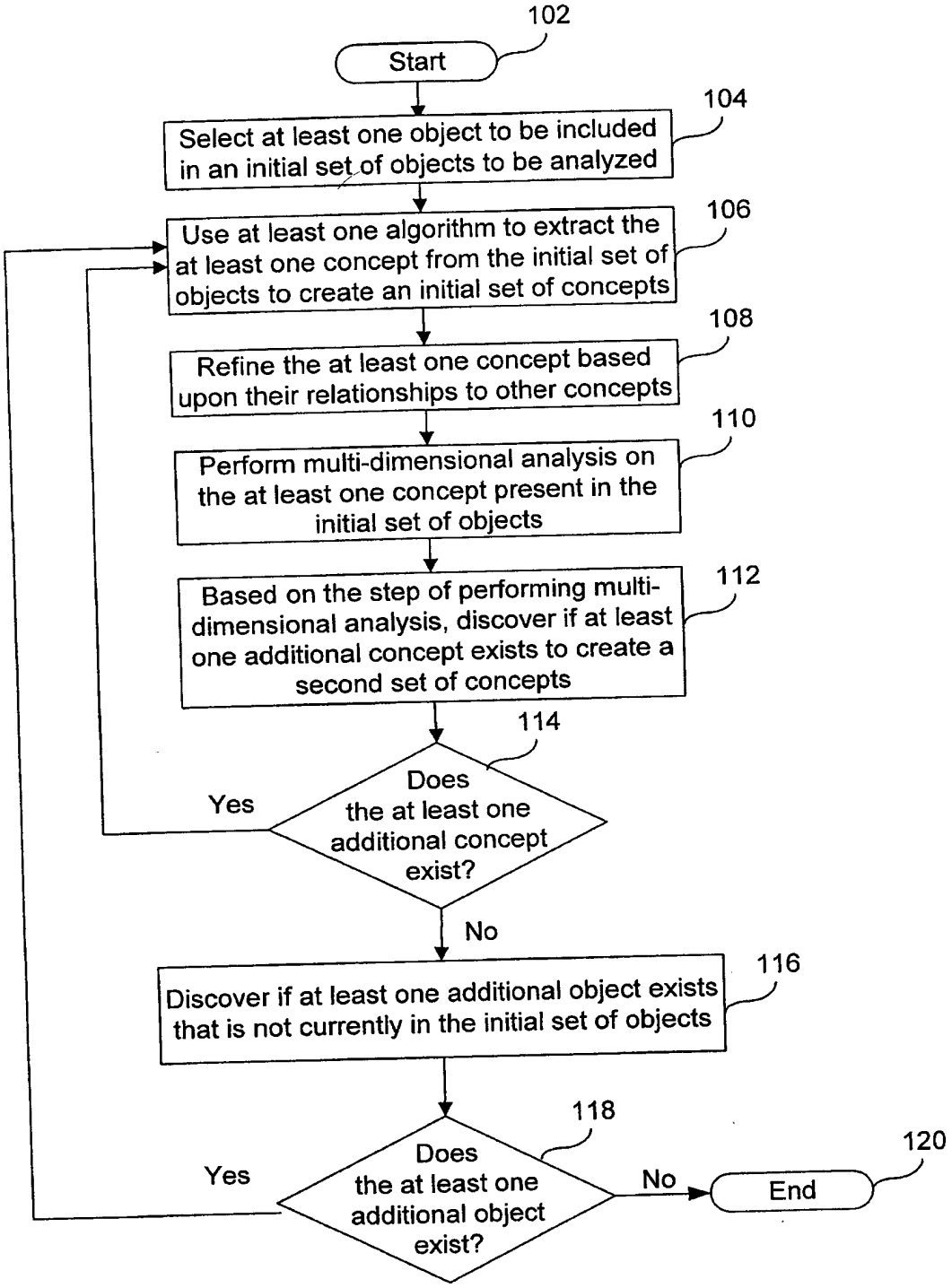

102
Start
104
Select at least one object to be included in an initial set of objects to be analyzed
106
Use at least one algorithm to extract the at least one concept from the initial set of objects to create an initial set of concepts
108
Refine the at least one concept based upon their relationships to other concepts
110
Perform multi-dimensional analysis on the at least one concept present in the initial set of objects
112
Based on the step of performing multi-dimensional analysis, discover if at least one additional concept exists to create a second set of concepts
114
Does the at least one additional concept exist?
Yes
No
116
Discover if at least one additional object exists that is not currently in the initial set of objects
118
Does the at least one additional object exist?
Yes
No
120
End

FIG. 1

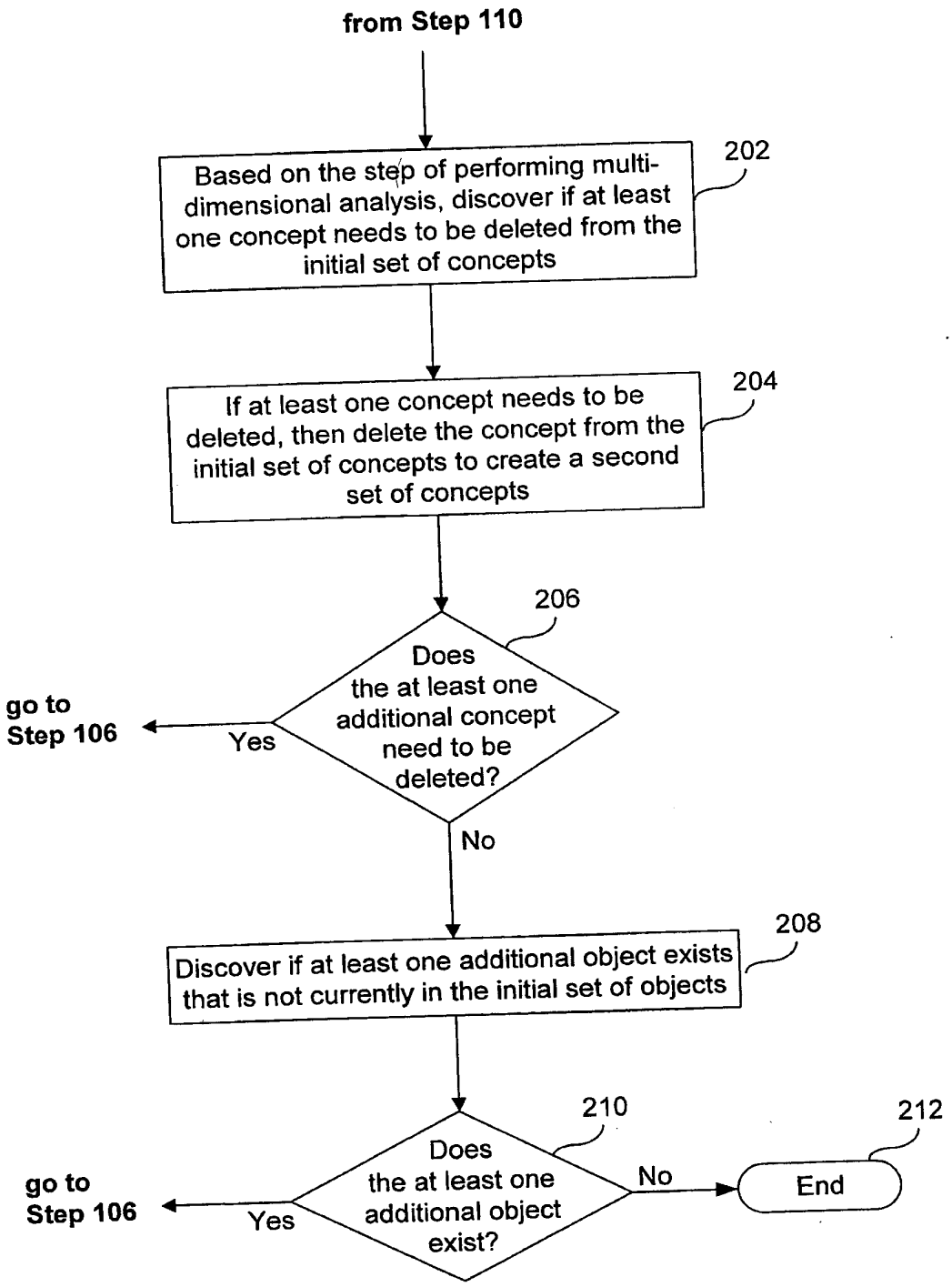

from Step 110
Based on the step of performing multi-dimensional analysis, discover if at least one concept needs to be deleted from the initial set of concepts
202
If at least one concept needs to be deleted, then delete the concept from the initial set of concepts to create a second set of concepts
204
206
Does the at least one additional concept need to be deleted?
Yes
go to Step 106
No
Discover if at least one additional object exists that is not currently in the initial set of objects
208
210
Does the at least one additional object exist?
Yes
go to Step 106
No
212
End

FIG. 2

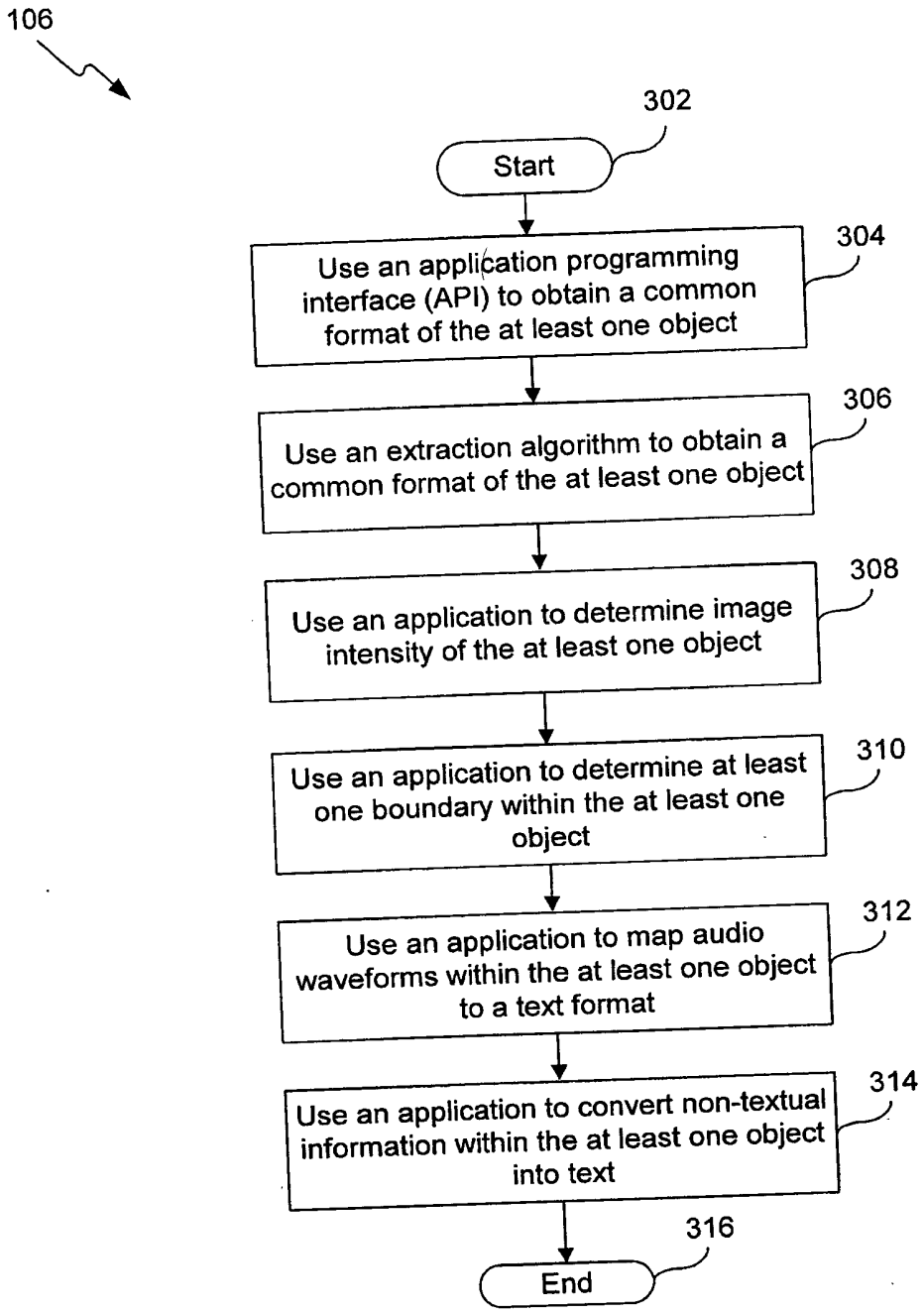

106
302
Start
304
Use an application programming interface (API) to obtain a common format of the at least one object
306
Use an extraction algorithm to obtain a common format of the at least one object
308
Use an application to determine image intensity of the at least one object
310
Use an application to determine at least one boundary within the at least one object
312
Use an application to map audio waveforms within the at least one object to a text format
314
Use an application to convert non-textual information within the at least one object into text
316
End

FIG. 3

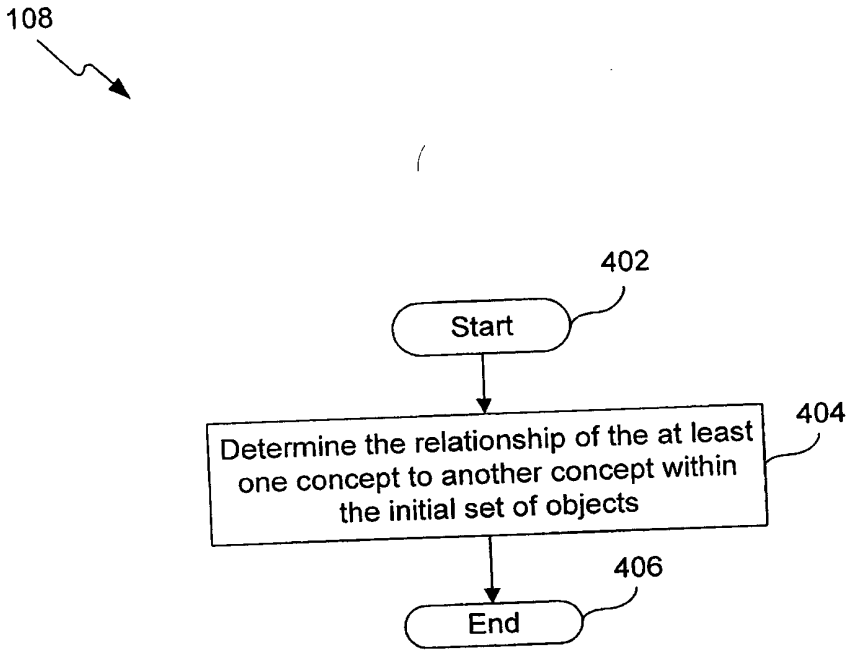

108
402
Start
Determine the relationship of the at least one concept to another concept within the initial set of objects
404
406
End

FIG. 4

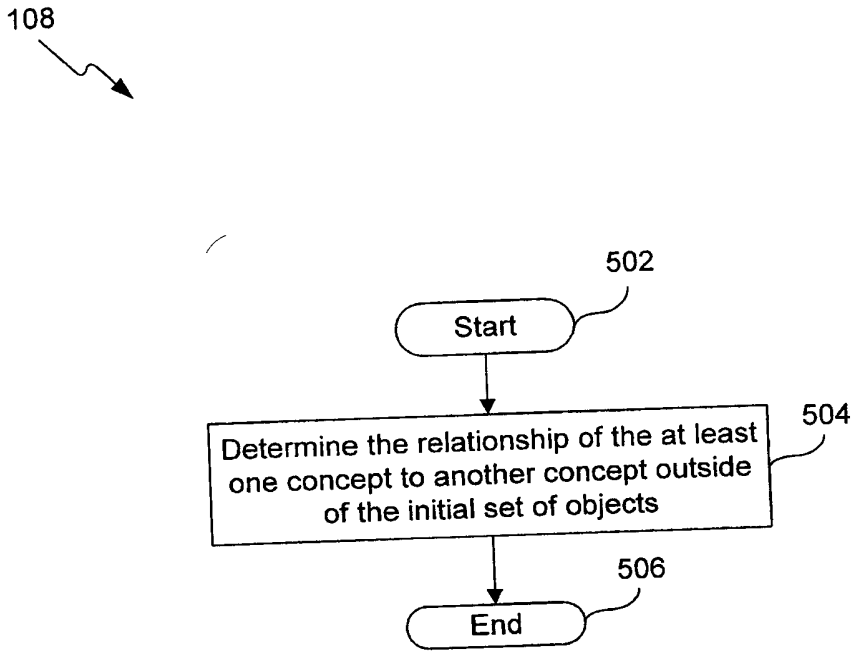

108
502
Start
Determine the relationship of the at least one concept to another concept outside of the initial set of objects
504
506
End

FIG. 5

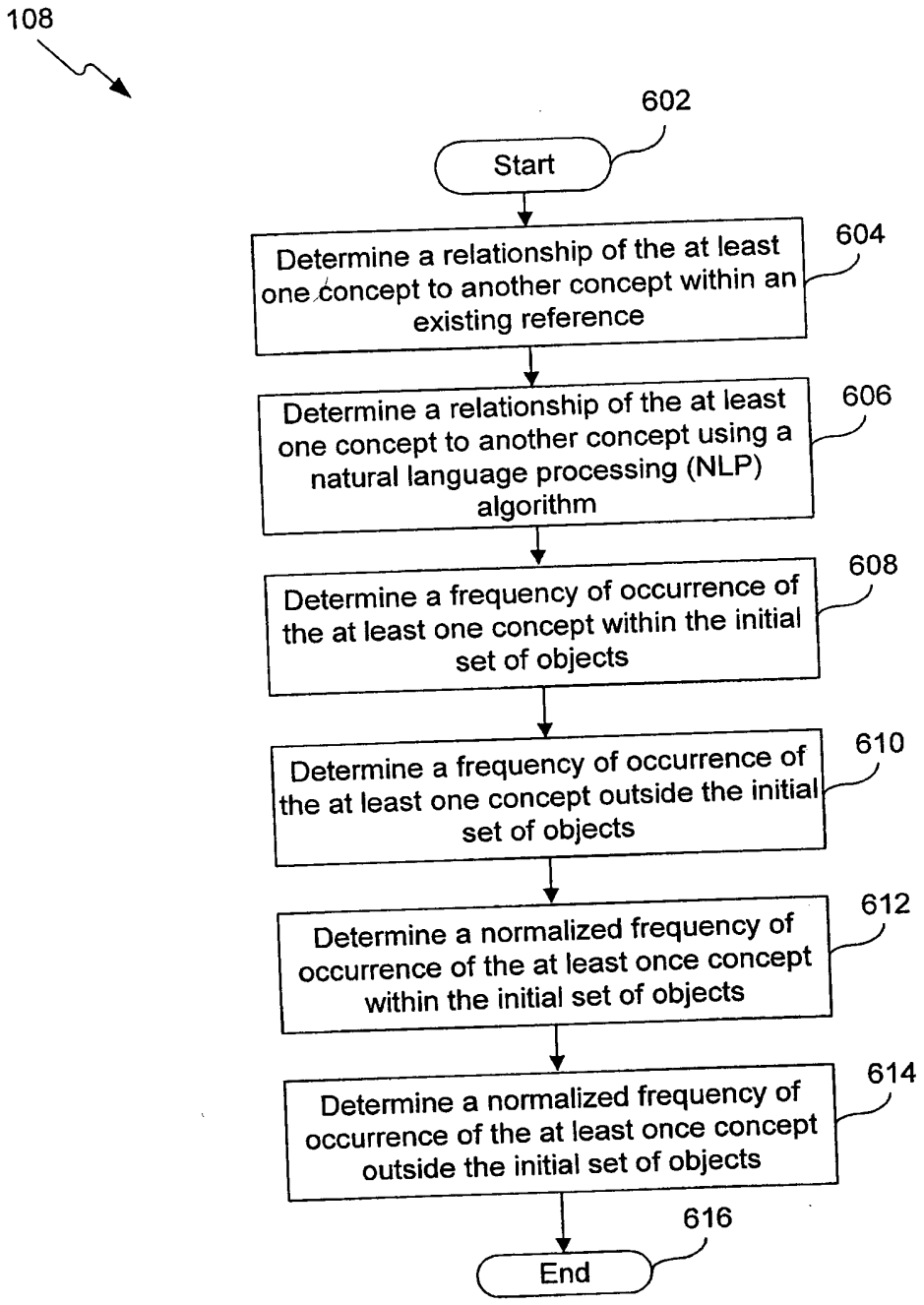

108
602
Start
Determine a relationship of the at least one concept to another concept within an existing reference
604
Determine a relationship of the at least one concept to another concept using a natural language processing (NLP) algorithm
606
Determine a frequency of occurrence of the at least one concept within the initial set of objects
608
Determine a frequency of occurrence of the at least one concept outside the initial set of objects
610
Determine a normalized frequency of occurrence of the at least once concept within the initial set of objects
612
Determine a normalized frequency of occurrence of the at least once concept outside the initial set of objects
614
616
End

FIG. 6

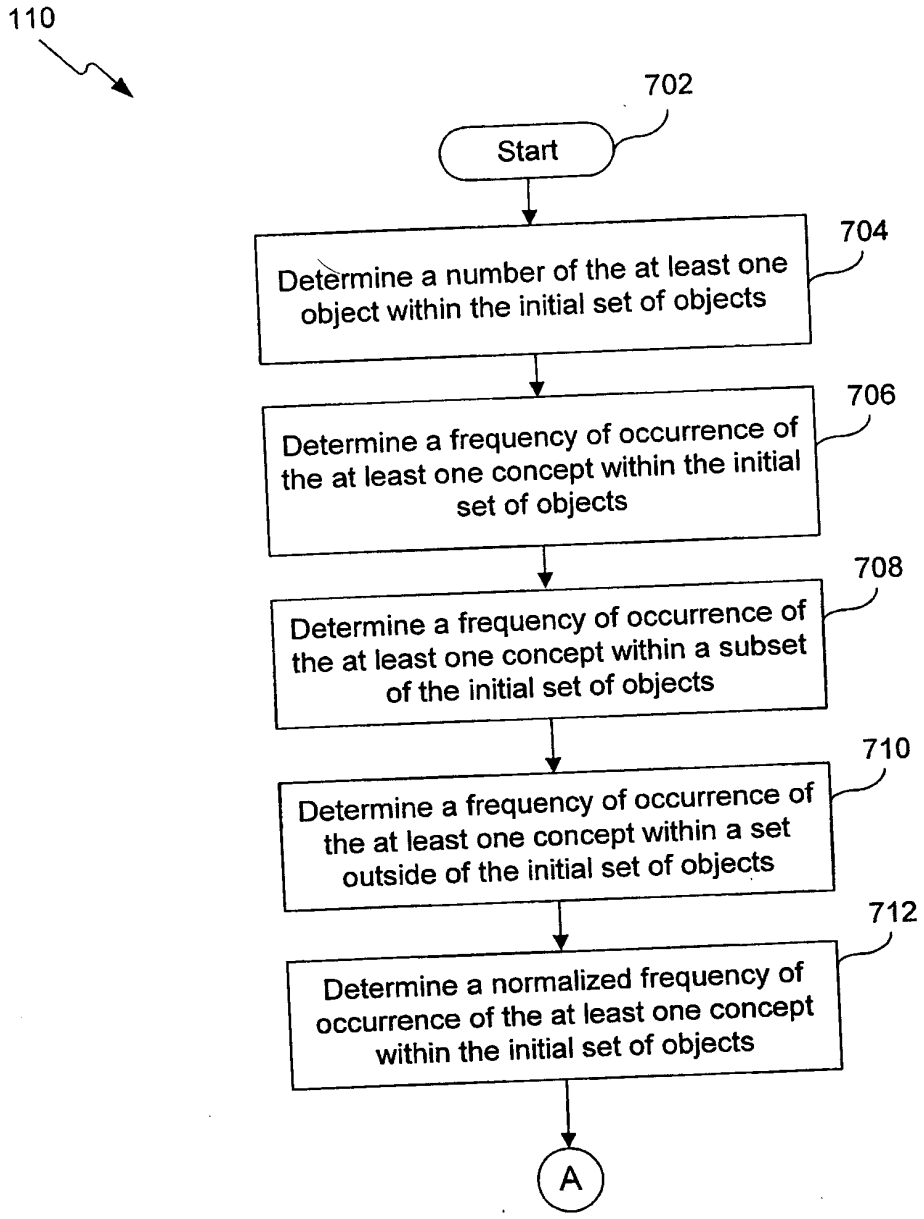

110
702
Start
704
Determine a number of the at least one object within the initial set of objects
706
Determine a frequency of occurrence of the at least one concept within the initial set of objects
708
Determine a frequency of occurrence of the at least one concept within a subset of the initial set of objects
710
Determine a frequency of occurrence of the at least one concept within a set outside of the initial set of objects
712
Determine a normalized frequency of occurrence of the at least one concept within the initial set of objects
A

FIG. 7A

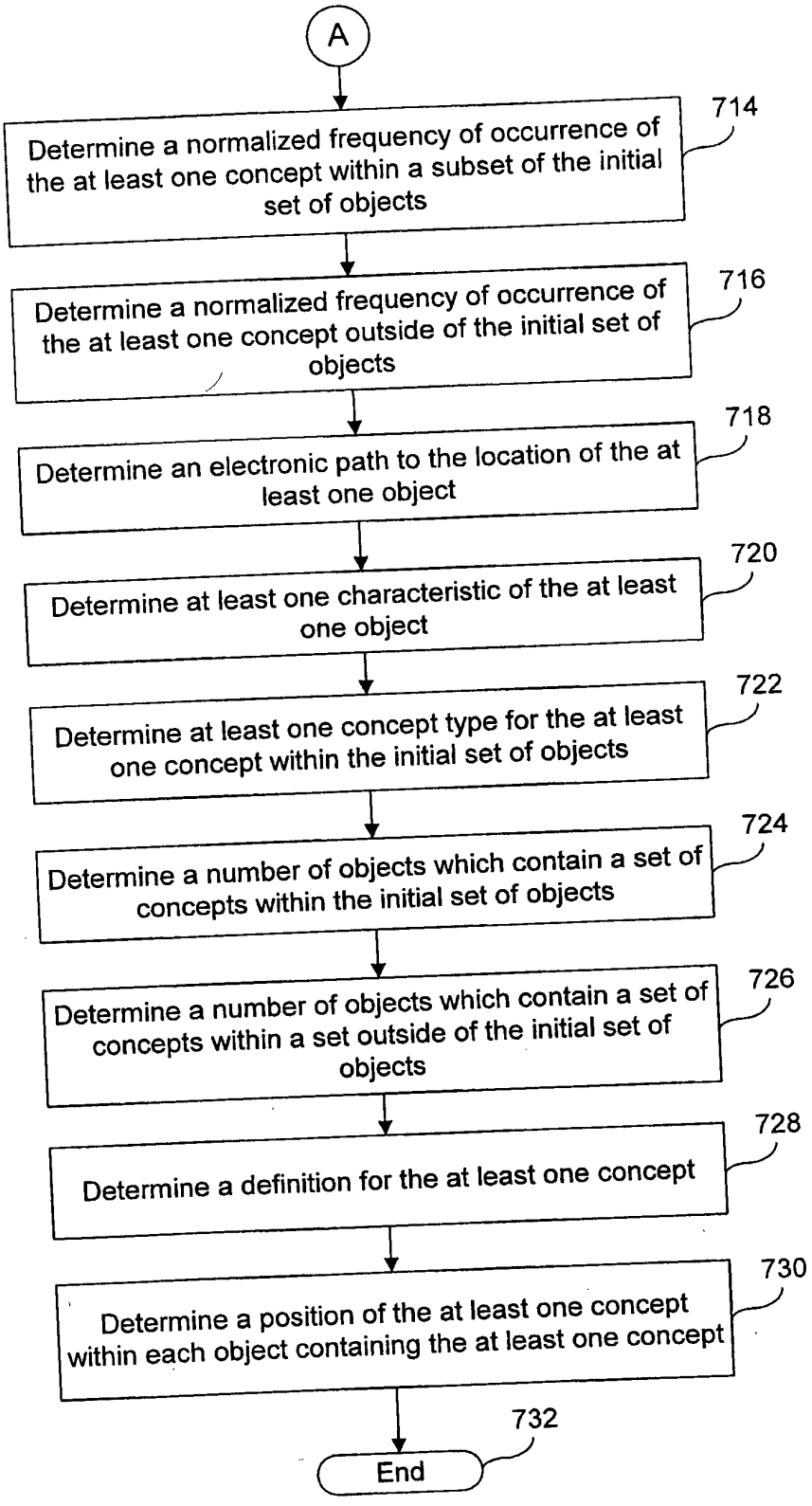

A
Determine a normalized frequency of occurrence of the at least one concept within a subset of the initial set of objects
714
Determine a normalized frequency of occurrence of the at least one concept outside of the initial set of objects
716
Determine an electronic path to the location of the at least one object
718
Determine at least one characteristic of the at least one object
720
Determine at least one concept type for the at least one concept within the initial set of objects
722
Determine a number of objects which contain a set of concepts within the initial set of objects
724
Determine a number of objects which contain a set of concepts within a set outside of the initial set of objects
726
Determine a definition for the at least one concept
728
Determine a position of the at least one concept within each object containing the at least one concept
730
End
732

FIG. 7B

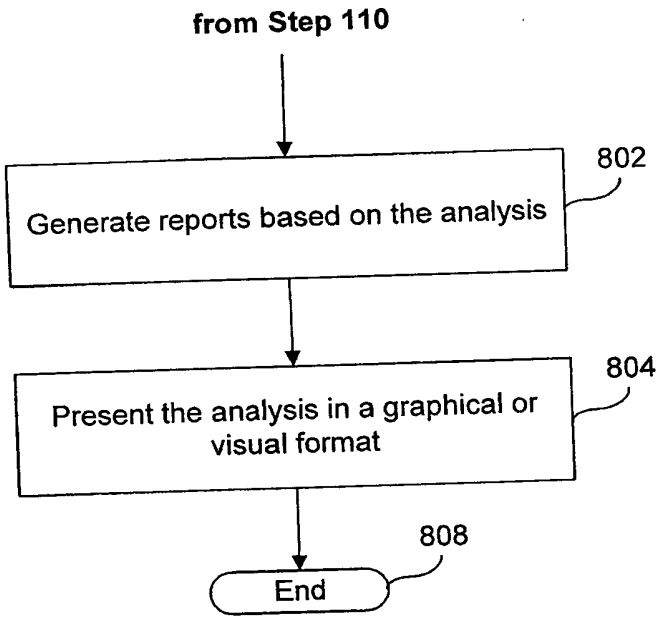

from Step 110
Generate reports based on the analysis
802
Present the analysis in a graphical or visual format
804
End
808

FIG. 8

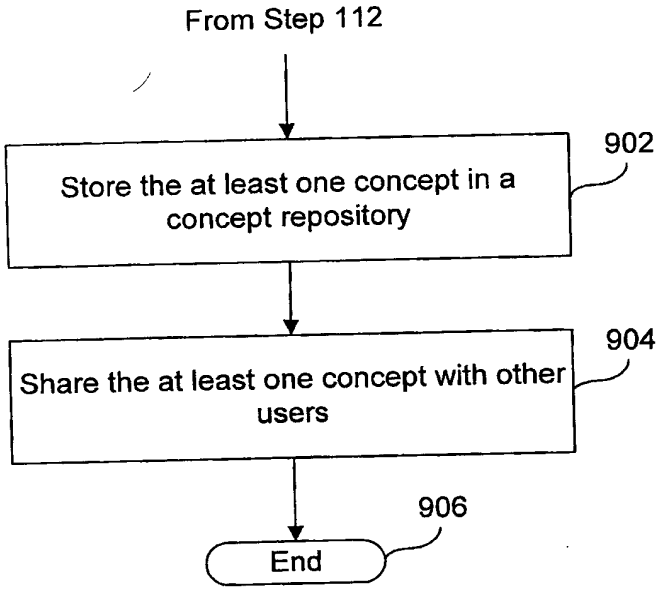

From Step 112
Store the at least one concept in a concept repository
902
Share the at least one concept with other users
904
End
906

FIG. 9

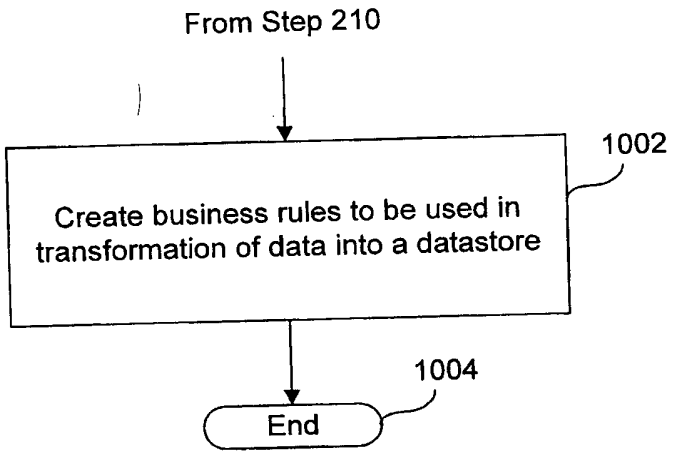

From Step 210
Create business rules to be used in transformation of data into a datastore
1002
1004
End

FIG. 10

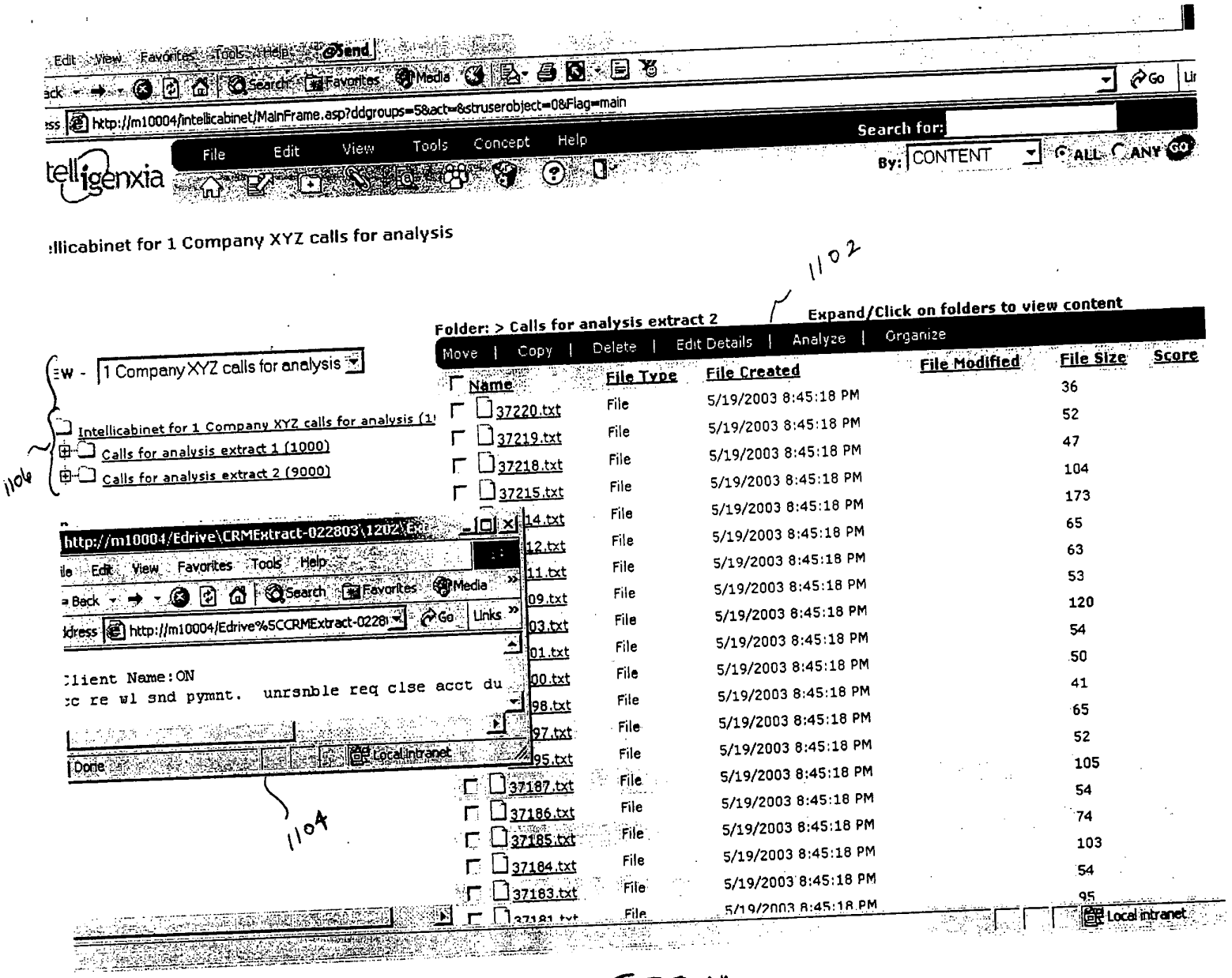

http://m10004/intellicabinet/MainFrame.asp?ddgroups=5&act=&struserobject=0&Flag=main
Search for:
File Edit View Tools Concept Help
By: CONTENT ALL ANY GO
:llicabinet for 1 Company XYZ calls for analysis
1102
Folder: > Calls for analysis extract 2
Expand/Click on folders to view content
Move | Copy | Delete | Edit Details | Analyze | Organize
1 Company XYZ calls for analysis
Intellicabinet for 1 Company XYZ calls for analysis (1
Calls for analysis extract 1 (1000)
Calls for analysis extract 2 (9000)
1106
Name
File Type
File Created
File Modified
File Size
Score
37220.txt File 5/19/2003 8:45:18 PM 36
37219.txt File 5/19/2003 8:45:18 PM 52
37218.txt File 5/19/2003 8:45:18 PM 47
37215.txt File 5/19/2003 8:45:18 PM 104
14.txt File 5/19/2003 8:45:18 PM 173
12.txt File 5/19/2003 8:45:18 PM 65
11.txt File 5/19/2003 8:45:18 PM 63
09.txt File 5/19/2003 8:45:18 PM 53
03.txt File 5/19/2003 8:45:18 PM 120
01.txt File 5/19/2003 8:45:18 PM 54
00.txt File 5/19/2003 8:45:18 PM 50
98.txt File 5/19/2003 8:45:18 PM 41
97.txt File 5/19/2003 8:45:18 PM 65
95.txt File 5/19/2003 8:45:18 PM 52
37187.txt File 5/19/2003 8:45:18 PM 105
37186.txt File 5/19/2003 8:45:18 PM 54
37185.txt File 5/19/2003 8:45:18 PM 74
37184.txt File 5/19/2003 8:45:18 PM 103
37183.txt File 5/19/2003 8:45:18 PM 54
5/19/2003 8:45:18 PM 95
http://m10004/Edrive\CRMExtract-022803\1202\E
Client Name:ON
:c re wl snd pymnt. unrsnble req clse acct du
Done
Local intranet
1104
Local intranet

FIG 11

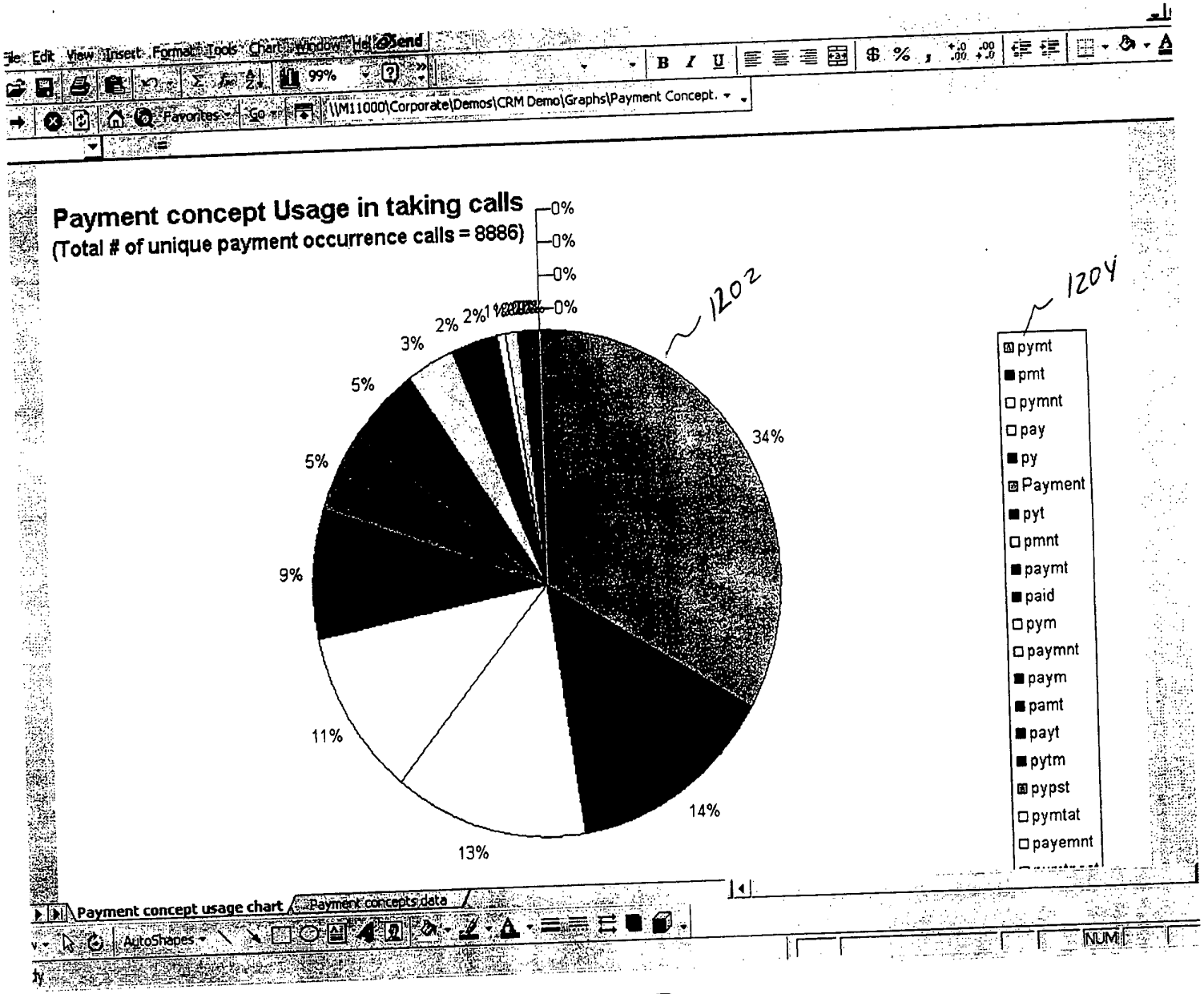

Payment concept Usage in taking calls
(Total # of unique payment occurrence calls = 8886)
1202
1204
34%
14%
13%
11%
9%
5%
5%
3%
2%
2%
0%
0%
0%
0%
pymt
pmt
pymnt
pay
py
Payment
pyt
pmnt
paymt
paid
pym
paymnt
paym
pamt
payt
pytm
pypst
pymtat
payemnt
Payment concept usage chart
Payment concepts data
AutoShapes
NUM

FIG 12

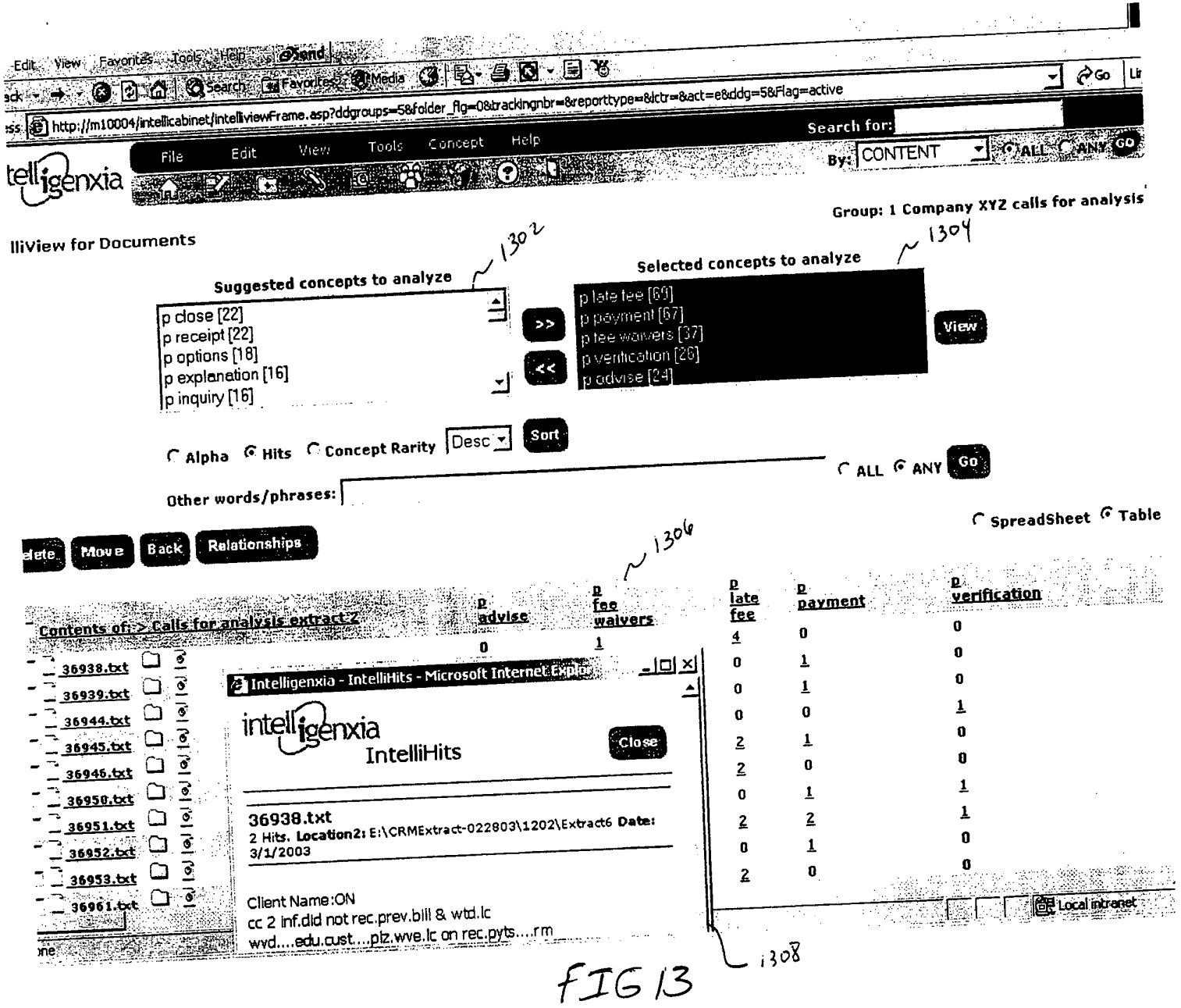

http://m10004/intellicabinet/intelliviewFrame.asp?ddgroups=5&folder_flg=0&trackingnbr=&reporttype=&dctr=&act=e&ddg=5&flag=active
File Edit View Tools Concept Help
Search for:
By: CONTENT ALL ANY GO
Group: 1 Company XYZ calls for analysis
lliView for Documents
1302
Suggested concepts to analyze
p close [22]
p receipt [22]
p options [18]
p explanation [16]
p inquiry [16]
>>
<<
1304
Selected concepts to analyze
p late fee [69]
p payment [67]
p fee waivers [37]
p verification [28]
p advise [24]
View
Alpha Hits Concept Rarity Desc Sort
Other words/phrases:
ALL ANY Go
SpreadSheet Table
elete Move Back Relationships
1306
Contents of: > Calls for analysis extract 2
36938.txt
36939.txt
36944.txt
36945.txt
36946.txt
36950.txt
36951.txt
36952.txt
36953.txt
36961.txt
p advise
p fee waivers
p late fee
p payment
p verification
0 1 4 0 0
0 0 1 0
0 0 1 0
0 0 0 1
0 2 1 0
0 2 0 0
0 0 1 1
0 2 2 1
0 0 1 0
0 2 0 0
Intelligenxia - IntelliHits - Microsoft Internet Explo
intelligenxia IntelliHits
Close
36938.txt
2 Hits. Location2: E:\CRMExtract-022803\1202\Extract6 Date: 3/1/2003
Client Name:ON
cc 2 inf.did not rec.prev.bill & wtd.lc
wvd....edu.cust...plz.wve.lc on rec.pyts....rm
1308
Local intranet

FIG 13

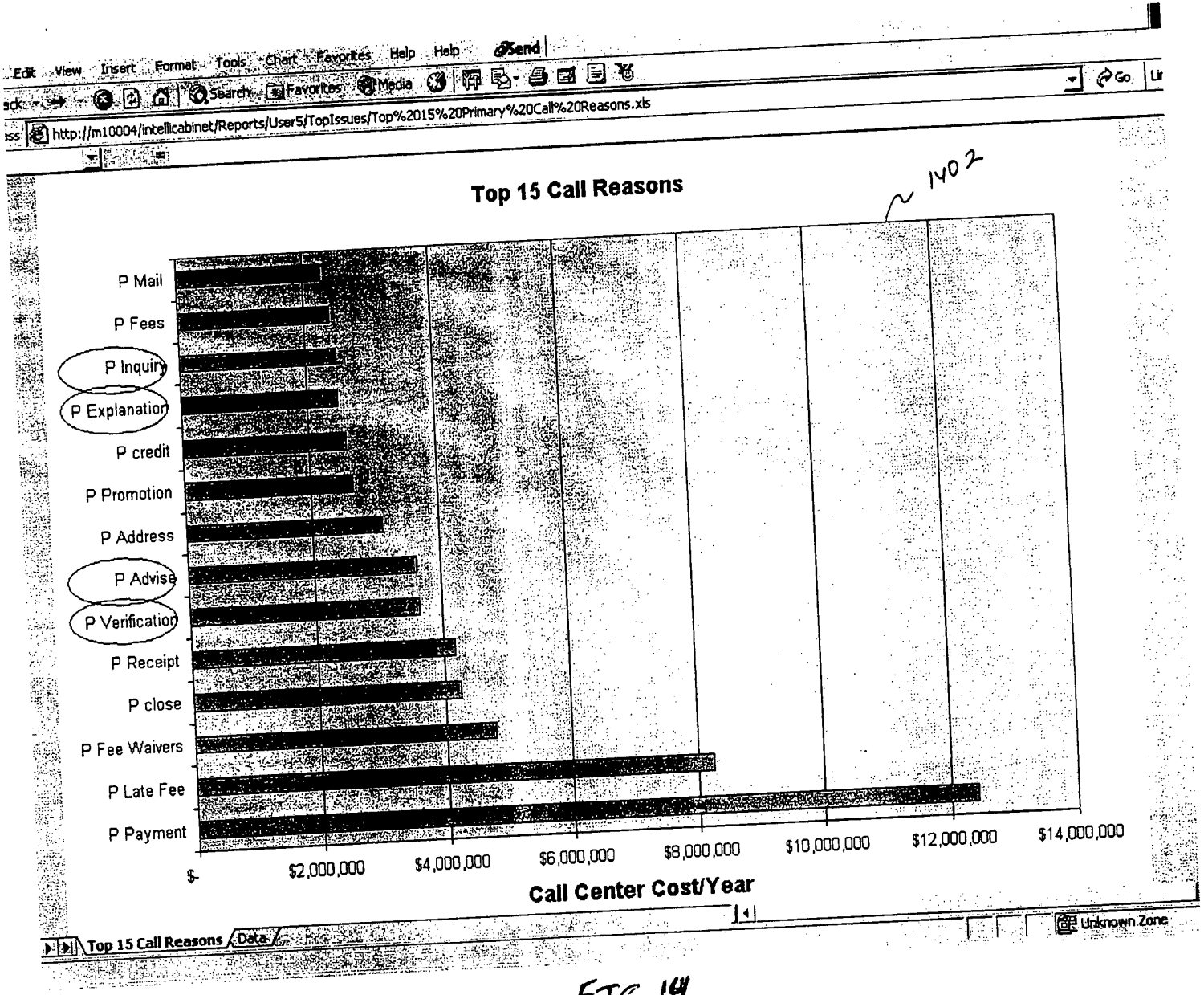

Edit View Insert Format Tools Chart Favorites Help Help Send
Search Favorites Media Go
http://m10004/intellicabinet/Reports/User5/TopIssues/Top%2015%20Primary%20Call%20Reasons.xls
Top 15 Call Reasons
1402
P Mail
P Fees
P Inquiry
P Explanation
P credit
P Promotion
P Address
P Advise
P Verification
P Receipt
P close
P Fee Waivers
P Late Fee
P Payment
$-
$2,000,000
$4,000,000
$6,000,000
$8,000,000
$10,000,000
$12,000,000
$14,000,000
Call Center Cost/Year
Top 15 Call Reasons
Data
Unknown Zone

FIG 14

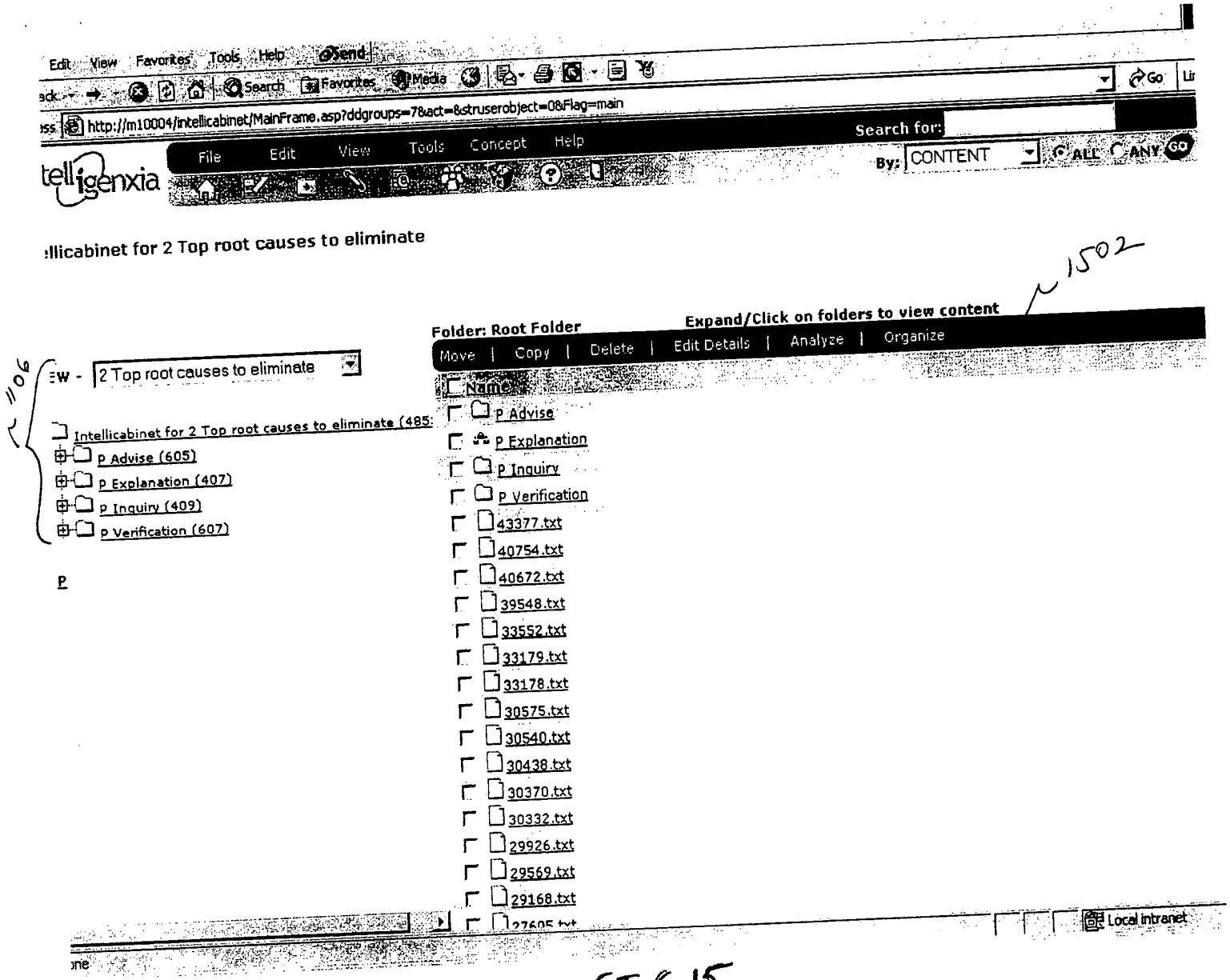

Edit View Favorites Tools Help Send
Search Favorites Media
http://m10004/intellicabinet/MainFrame.asp?ddgroups=7&act=&struserobject=08Flag=main
telligenxia
File Edit View Tools Concept Help
Search for:
By: CONTENT ALL ANY GO
:llicabinet for 2 Top root causes to eliminate
1502
1106
:W - 2 Top root causes to eliminate
Intellicabinet for 2 Top root causes to eliminate (485:
P Advise (605)
P Explanation (407)
P Inquiry (409)
P Verification (607)
P
Folder: Root Folder
Expand/Click on folders to view content
Move | Copy | Delete | Edit Details | Analyze | Organize
Name
P Advise
P Explanation
P Inquiry
P Verification
43377.txt
40754.txt
40672.txt
39548.txt
33552.txt
33179.txt
33178.txt
30575.txt
30540.txt
30438.txt
30370.txt
30332.txt
29926.txt
29569.txt
29168.txt
Local intranet

FIG. 15

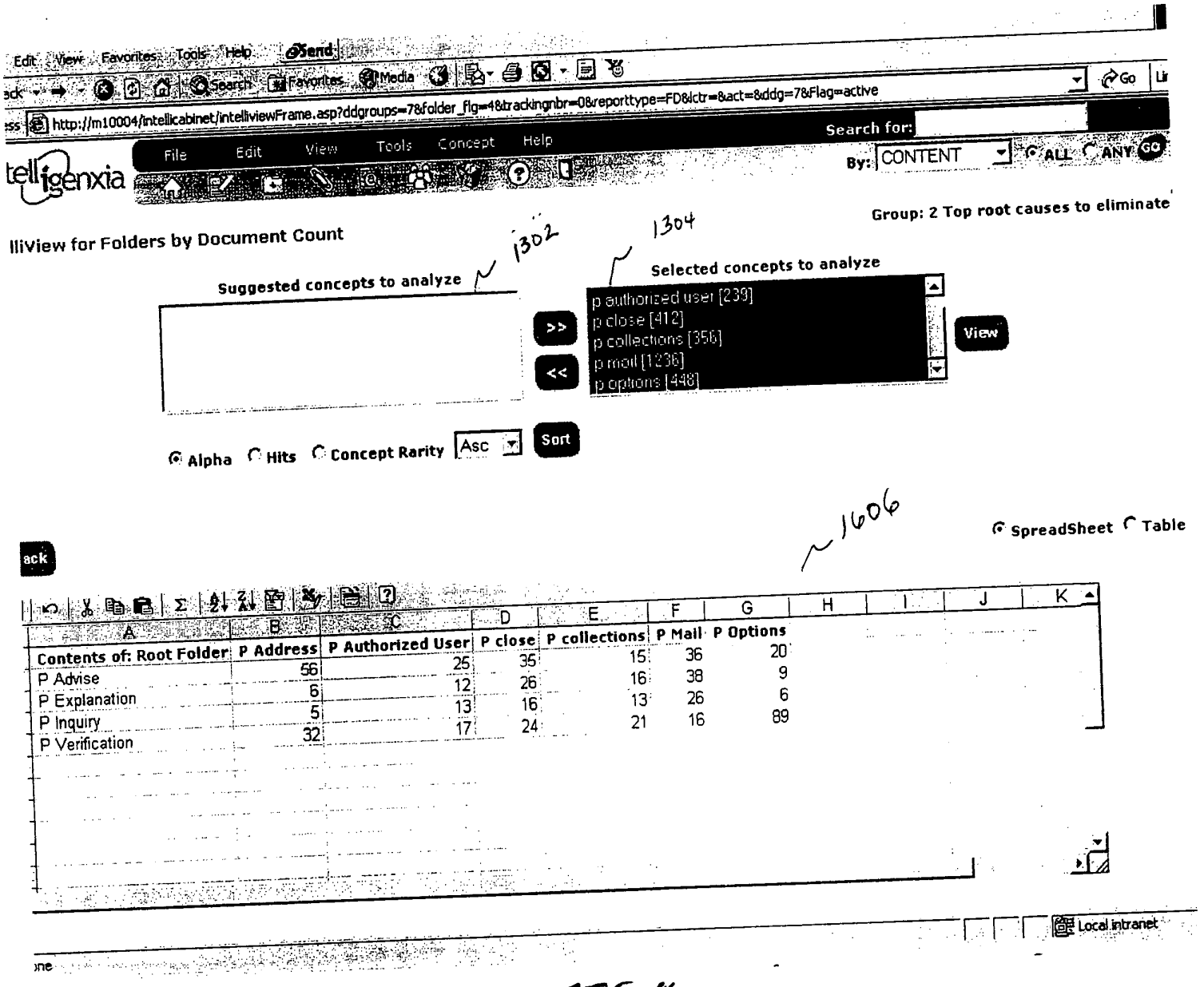

Edit View Favorites Tools Help Send
Search Favorites Media Go
http://m10004/intellicabinet/intelliviewFrame.asp?ddgroups=7&folder_flg=4&trackingnbr=0&reporttype=FD&lctr=&act=&ddg=7&flag=active
File Edit View Tools Concept Help
Search for:
By: CONTENT ALL ANY GO
Group: 2 Top root causes to eliminate
lliView for Folders by Document Count
1302
1304
Suggested concepts to analyze
Selected concepts to analyze
p authorized user [239]
p close [412]
p collections [356]
p mail [1236]
p options [448]
>>
<<
View
Alpha Hits Concept Rarity Asc Sort
1606
SpreadSheet Table
ack
Contents of: Root Folder | P Address | P Authorized User | P close | P collections | P Mail | P Options
P Advise | 56 | 25 | 35 | 15 | 36 | 20
P Explanation | 6 | 12 | 26 | 16 | 38 | 9
P Inquiry | 5 | 13 | 16 | 13 | 26 | 6
P Verification | 32 | 17 | 24 | 21 | 16 | 89
Local intranet

FIG. 16

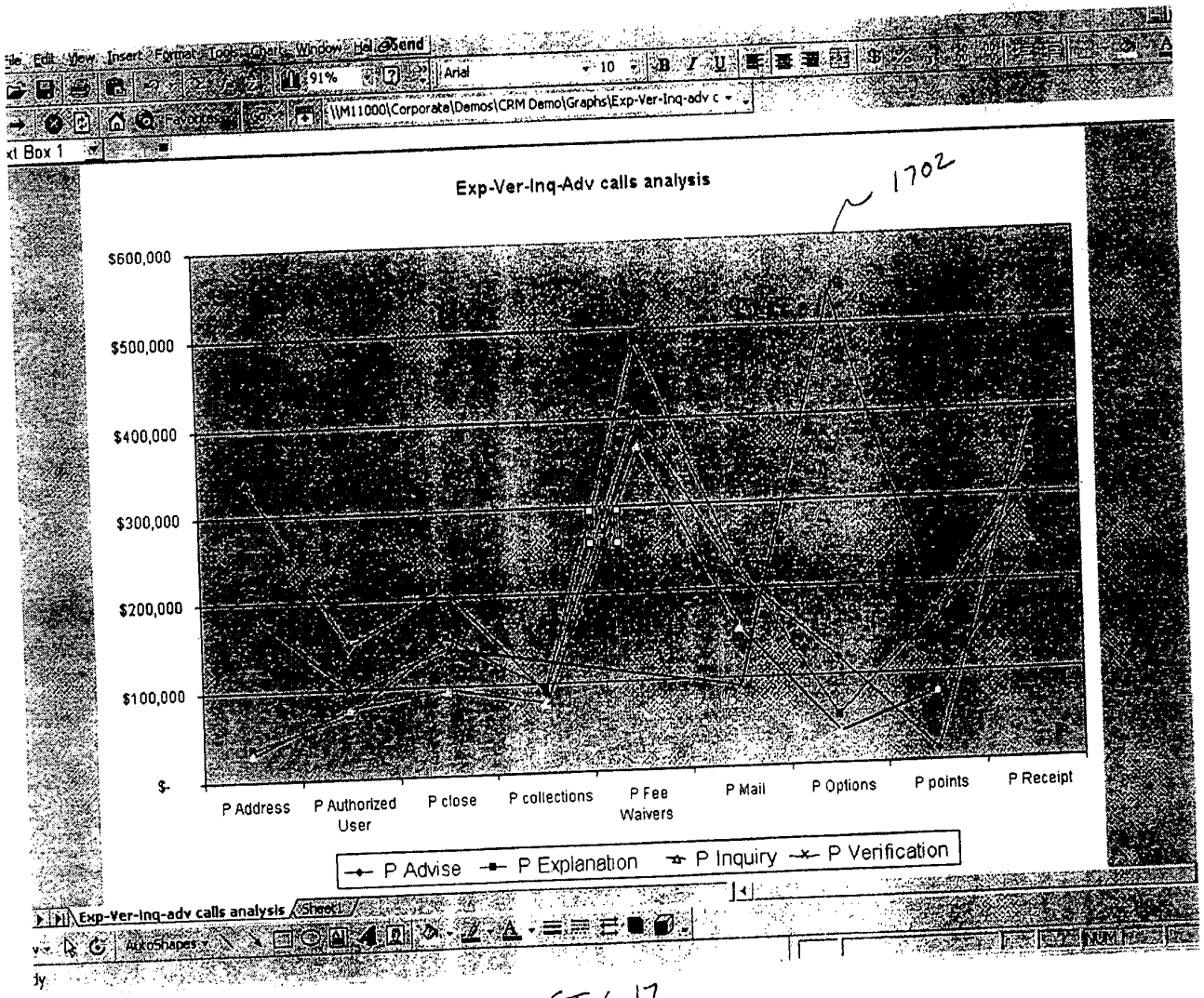

Exp-Ver-Inq-Adv calls analysis
1702
$600,000
$500,000
$400,000
$300,000
$200,000
$100,000
$-
P Address
P Authorized User
P close
P collections
P Fee Waivers
P Mail
P Options
P points
P Receipt
P Advise
P Explanation
P Inquiry
P Verification
Exp-Ver-Inq-adv calls analysis
Sheet1
AutoShapes

FIG. 17

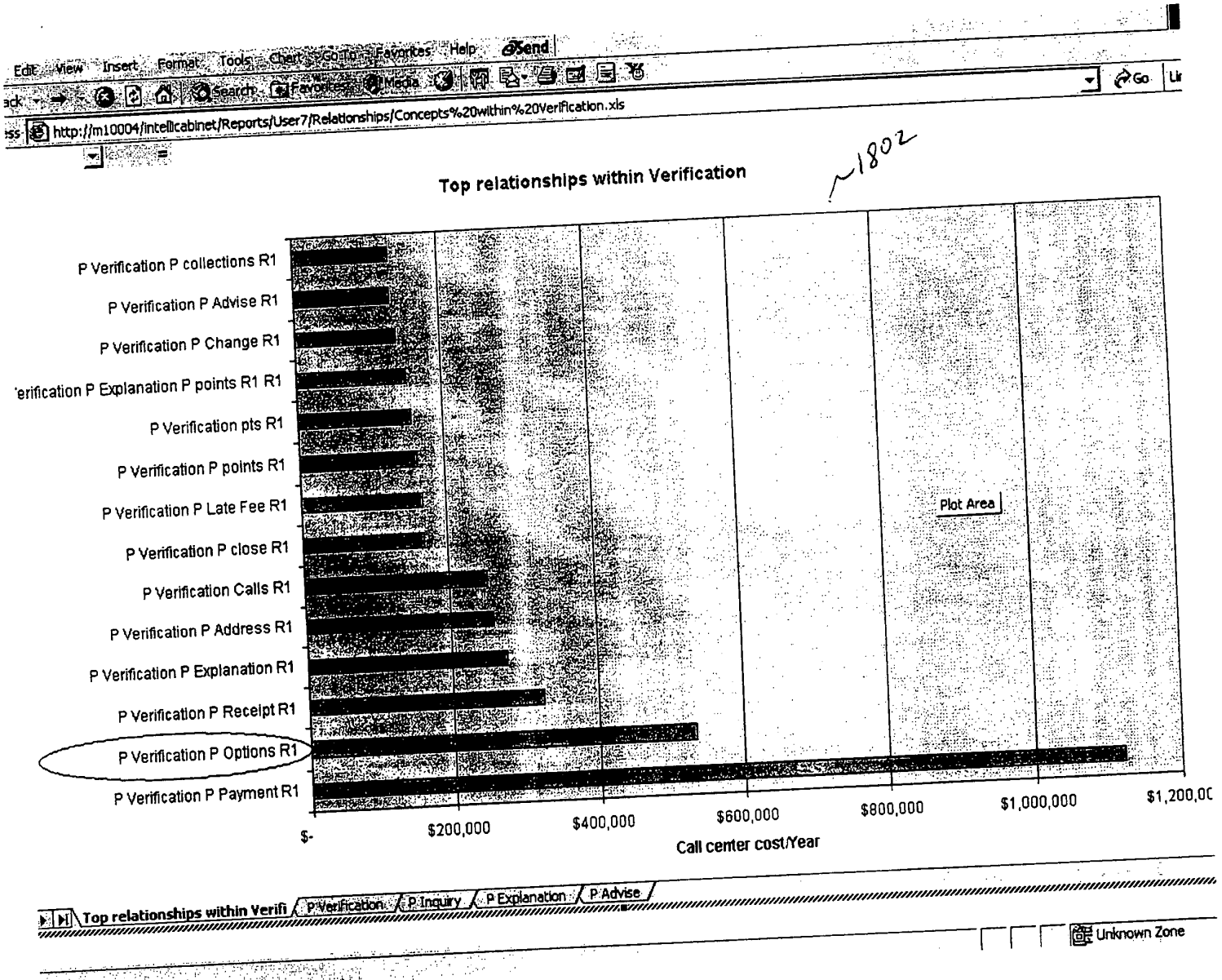

Edit View Insert Format Tools Chart GoTo Favorites Help Send
Search Favorites Media Go
http://m10004/intellicabinet/Reports/User7/Relationships/Concepts%20within%20Verification.xls
Top relationships within Verification
1802
P Verification P collections R1
P Verification P Advise R1
P Verification P Change R1
erification P Explanation P points R1 R1
P Verification pts R1
P Verification P points R1
P Verification P Late Fee R1
P Verification P close R1
P Verification Calls R1
P Verification P Address R1
P Verification P Explanation R1
P Verification P Receipt R1
P Verification P Options R1
P Verification P Payment R1
Plot Area
$-
$200,000
$400,000
$600,000
$800,000
$1,000,000
$1,200,00
Call center cost/Year
Top relationships within Verifi
P Verification
P Inquiry
P Explanation
P Advise
Unknown Zone

FIG. 18

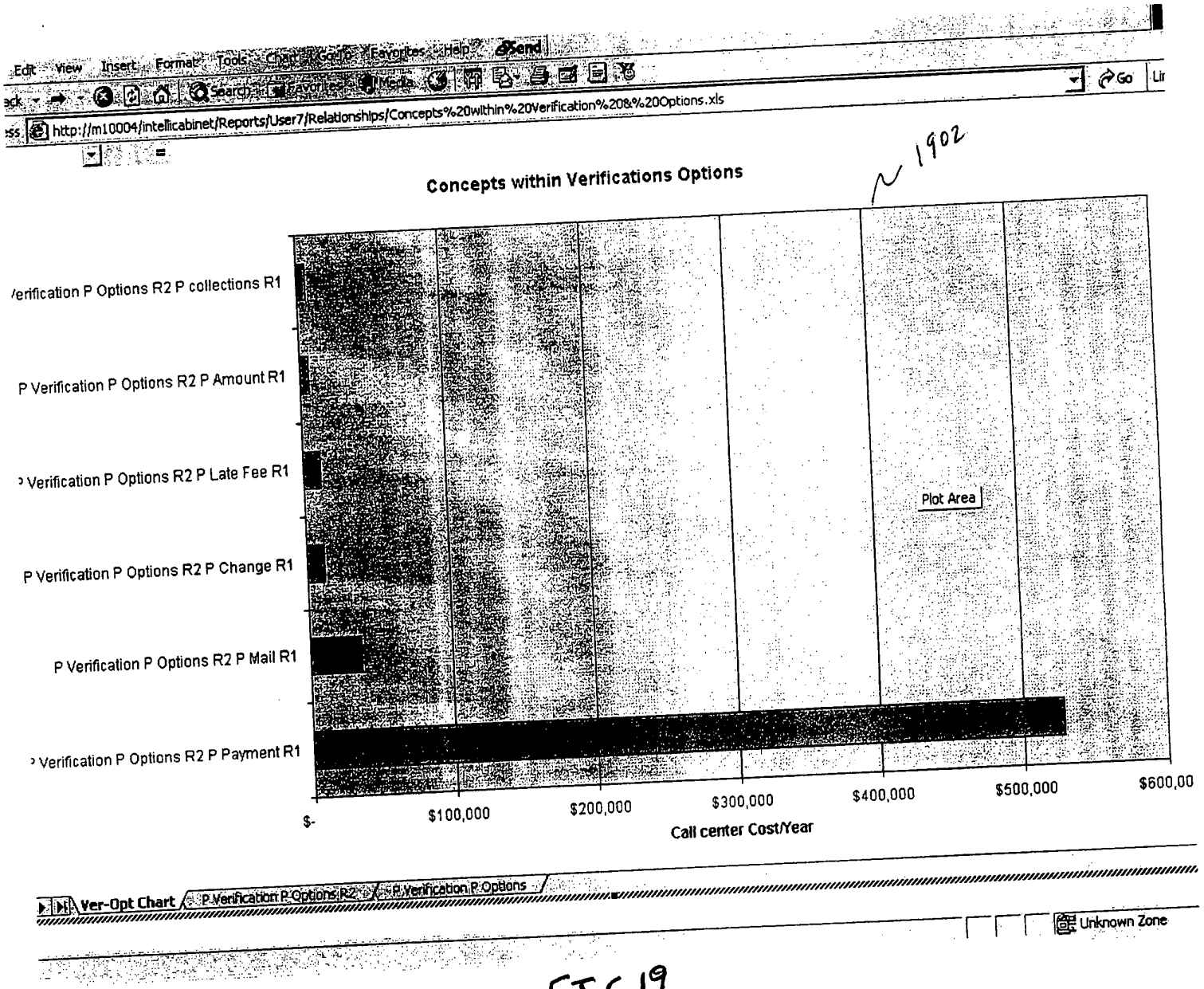

Edit View Insert Format Tools Chart Graph Favorites Help Send
Search Favorites Media Go
http://m10004/intellicabinet/Reports/User7/Relationships/Concepts%20within%20Verification%20&%20Options.xls
1902
Concepts within Verifications Options
/erification P Options R2 P collections R1
P Verification P Options R2 P Amount R1
› Verification P Options R2 P Late Fee R1
P Verification P Options R2 P Change R1
P Verification P Options R2 P Mail R1
› Verification P Options R2 P Payment R1
Plot Area
$-
$100,000
$200,000
$300,000
$400,000
$500,000
$600,00
Call center Cost/Year
Ver-Opt Chart
P Verification P Options R2
P Verification P Options
Unknown Zone

FIG.19

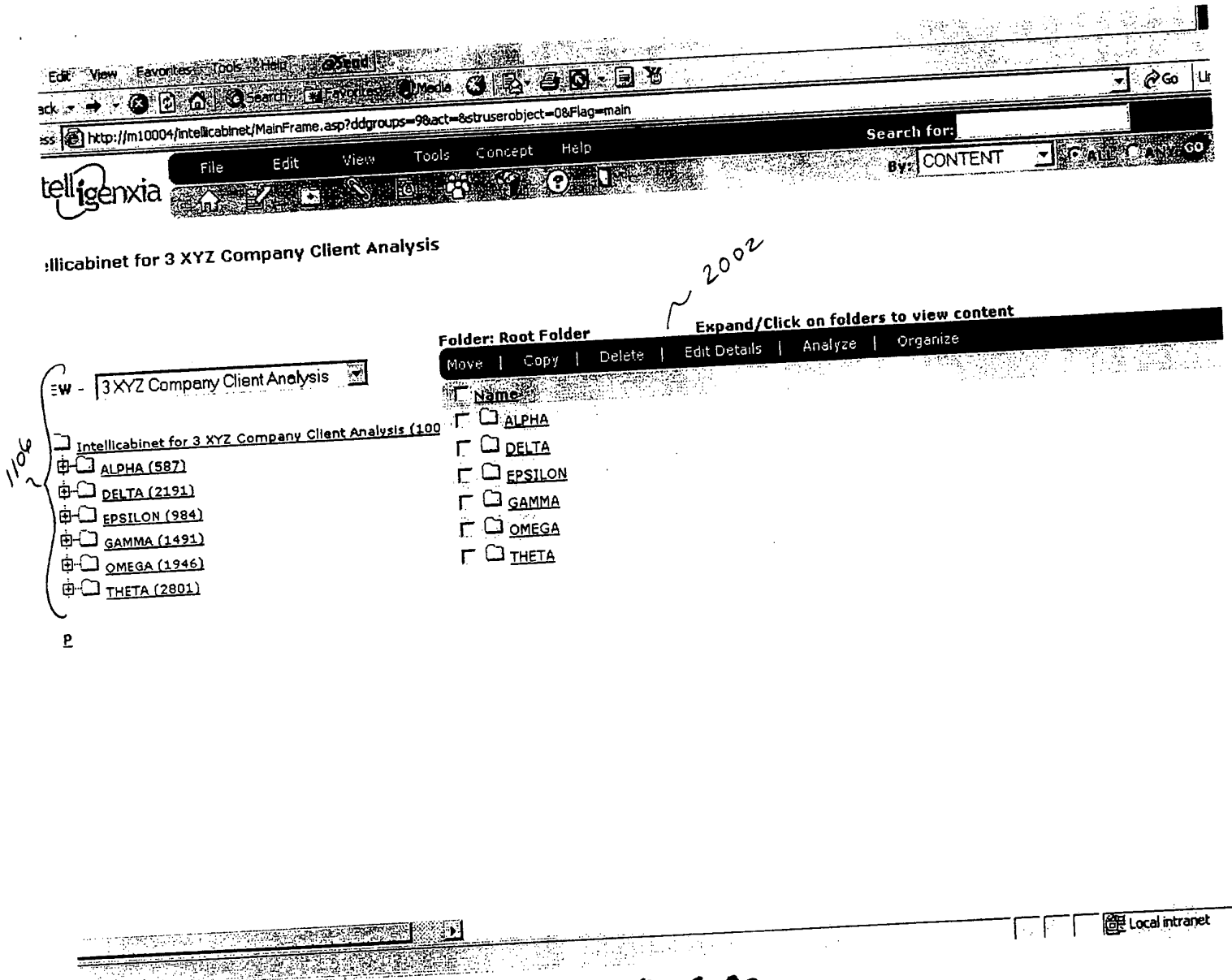

Edit View Favorites Tools Help
http://m10004/intellicabinet/MainFrame.asp?ddgroups=98&act=8struserobject=0&Flag=main
Search for:
File Edit View Tools Concept Help
By: CONTENT ALL ANY GO
telligenxia
illicabinet for 3 XYZ Company Client Analysis
2002
Folder: Root Folder
Expand/Click on folders to view content
Move | Copy | Delete | Edit Details | Analyze | Organize
EW - 3 XYZ Company Client Analysis
1106
Intellicabinet for 3 XYZ Company Client Analysis (100
ALPHA (587)
DELTA (2191)
EPSILON (984)
GAMMA (1491)
OMEGA (1946)
THETA (2801)
P
Name
ALPHA
DELTA
EPSILON
GAMMA
OMEGA
THETA
Local intranet

FIG. 20

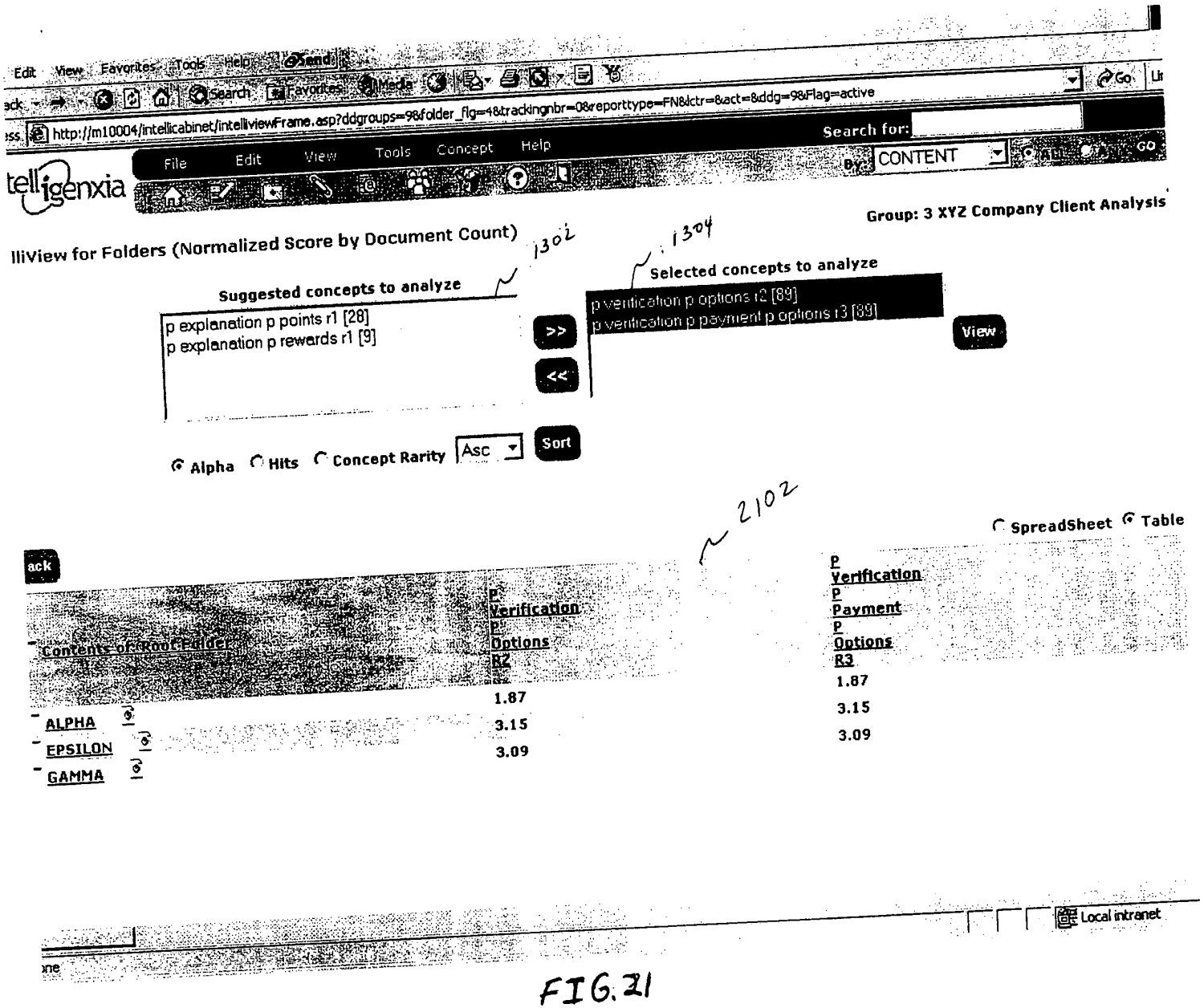

Edit View Favorites Tools Help
http://m10004/intellicabinet/intelliviewFrame.asp?ddgroups=98&folder_flg=4&trackingnbr=0&reporttype=FN&lctr=&act=&ddg=98&flag=active
telligenxia
File Edit View Tools Concept Help
Search for:
By: CONTENT
GO
Group: 3 XYZ Company Client Analysis
lliView for Folders (Normalized Score by Document Count)
1302
1304
Suggested concepts to analyze
p explanation p points r1 [28]
p explanation p rewards r1 [9]
>>
<<
Selected concepts to analyze
p verification p options r2 [89]
p verification p payment p options r3 [89]
View
Alpha
Hits
Concept Rarity
Asc
Sort
2102
SpreadSheet
Table
ack
Contents of Root Folder
P Verification P Options R2
P Verification P Payment P Options R3
ALPHA
EPSILON
GAMMA
1.87
3.15
3.09
3.15
3.09
Local intranet

FIG. 21

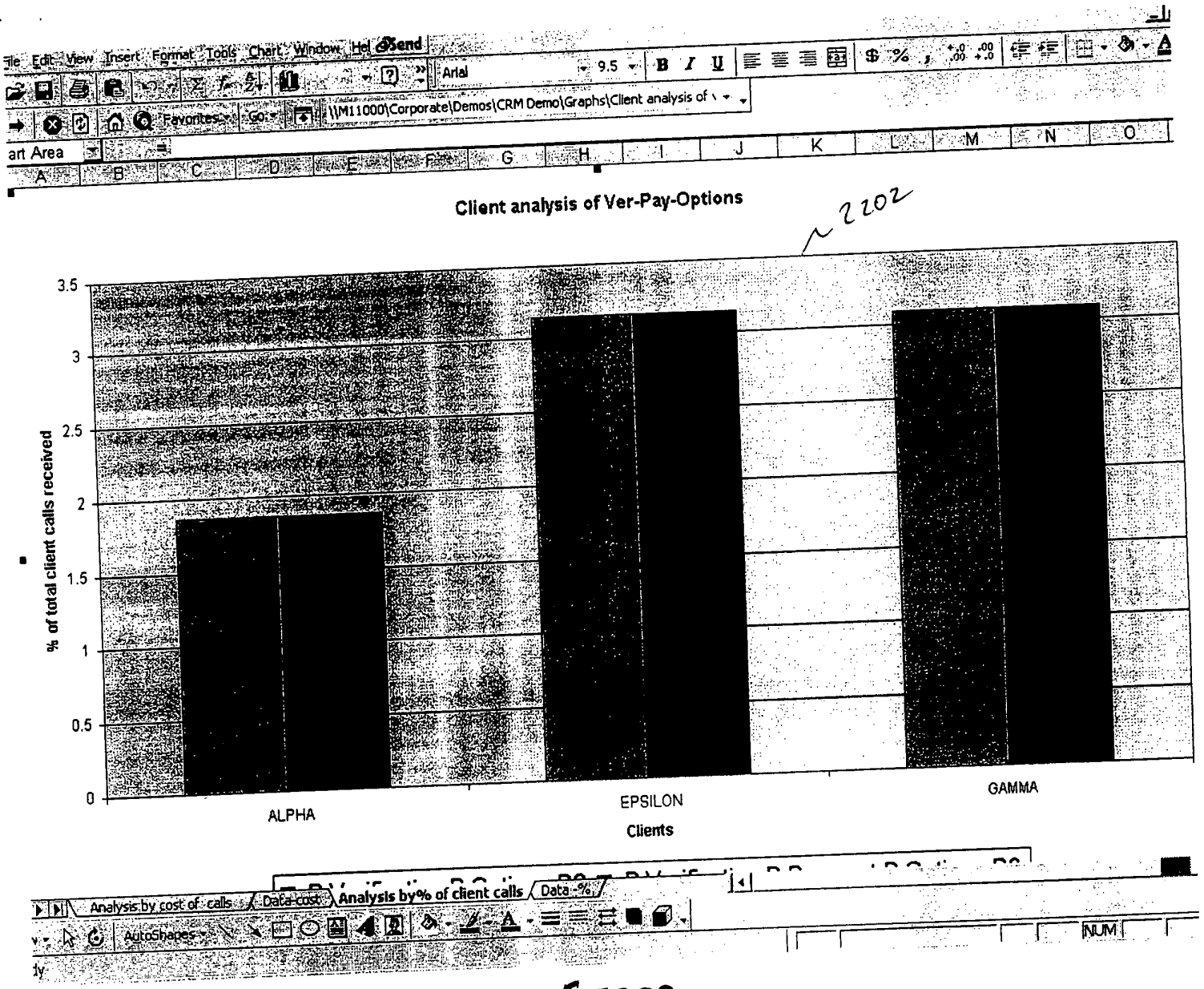

Client analysis of Ver-Pay-Options
2202
% of total client calls received
3.5
3
2.5
2
1.5
1
0.5
0
ALPHA
EPSILON
GAMMA
Clients
Analysis by cost of calls
Data-cost
Analysis by% of client calls
Data -%
AutoShapes
NUM

FIG.22

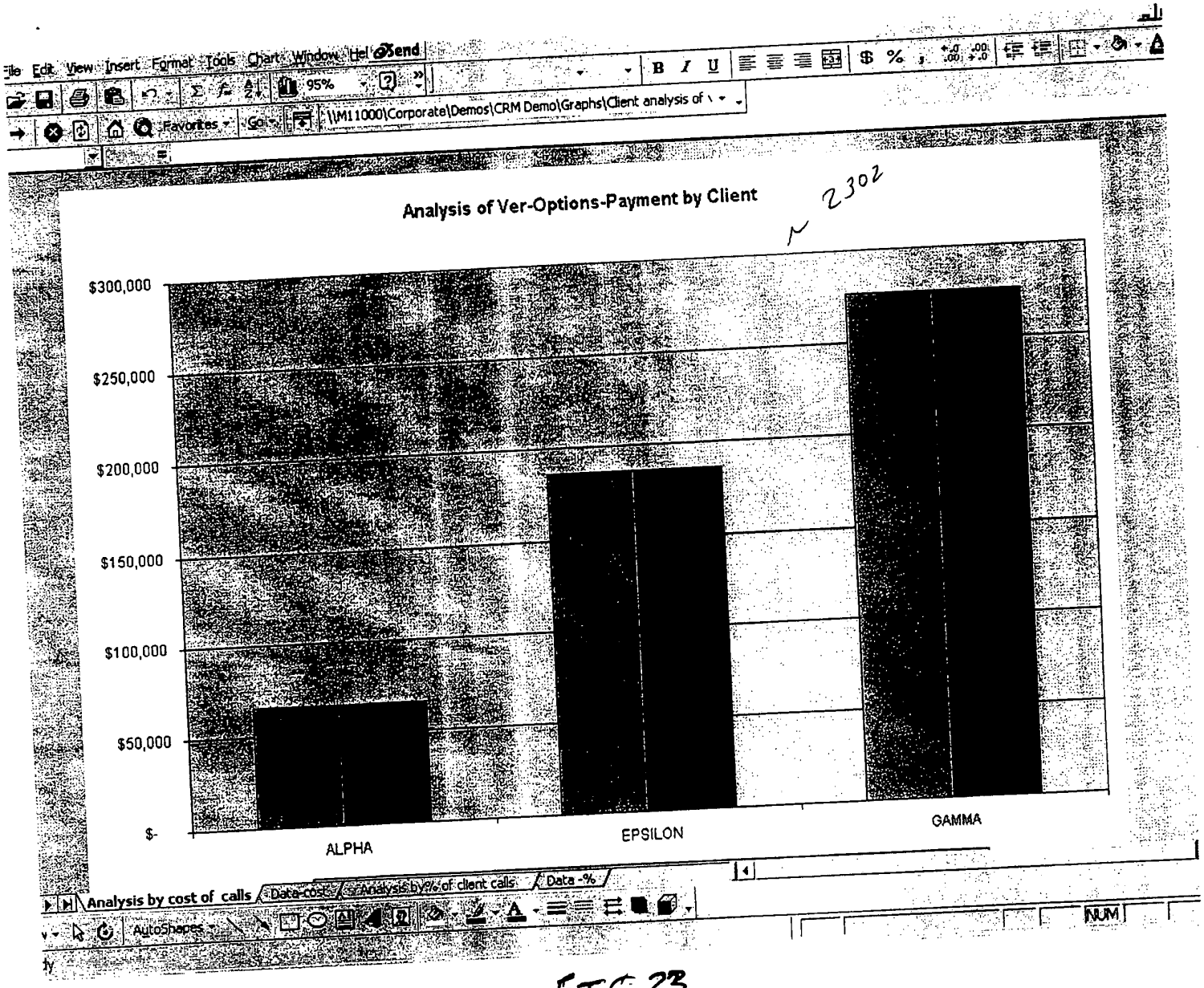

File Edit View Insert Format Tools Chart Window Help Send
95%
\\M11000\Corporate\Demos\CRM Demo\Graphs\Client analysis of
Favorites
Go
Analysis of Ver-Options-Payment by Client
2302
$300,000
$250,000
$200,000
$150,000
$100,000
$50,000
$-
ALPHA
EPSILON
GAMMA
Analysis by cost of calls
Data-cost
Analysis by% of client calls
Data -%
AutoShapes
NUM

FIG. 23

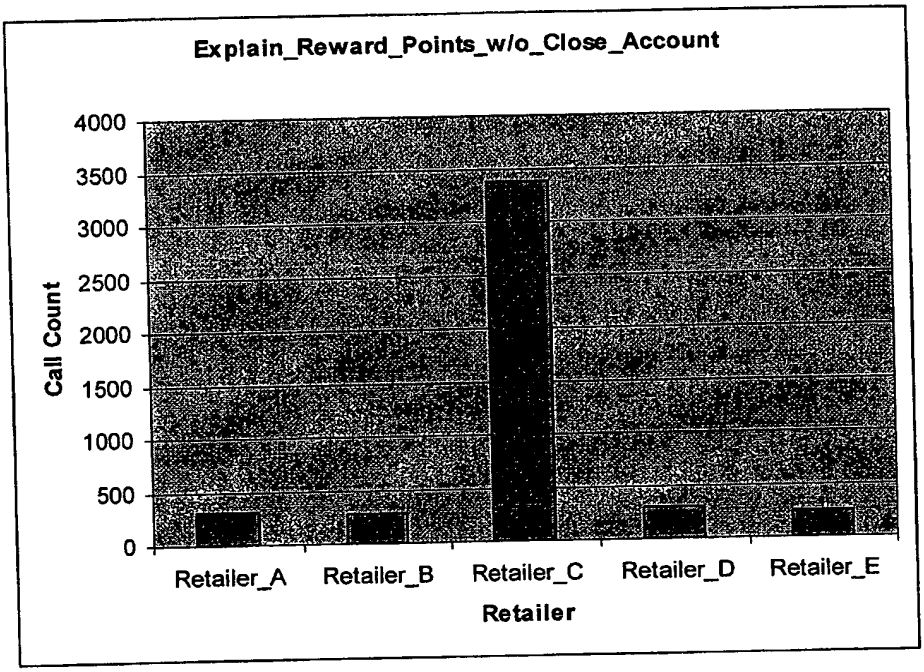

Explain_Reward_Points_w/o_Close_Account
4000
3500
3000
2500
2000
1500
1000
500
0
Call Count
Retailer_A
Retailer_B
Retailer_C
Retailer_D
Retailer_E
Retailer

FIG. 24